

especially for the purpose of preventing the onset of septic manifestations in early wounds, is emphasized; also their use for preventive exacerbations after operating on areas already infected. Operative measures are an essential preliminary to the effective use of therapeutic antiseptics in wounds, since the antiseptic can act only when brought into intimate contact with the infected tissues.

Localization of the Growing Point in the Epiphyseal Cartilage Plate of Bones.—HAAS (*Am. Jour. Orthop. Surg.*, 1917, xv, 563) says that while it is an accepted fact that longitudinal growth of bone takes place in the region of the epiphyseal cartilage plate and that growth continues until that particular highly differentiated zone of cartilage undergoes complete ossification; the question arises as to the particular part which is most important in the production of the length growth. Haas carried out an experimental study on dogs in an effort to answer this question. He concluded that an incision through a growing bone at the junction of the metaphysis with the epiphysis always causes a disturbance in growth. A separation in the natural line of cleavage between the epiphysis and metaphysis, after incising the periosteum, causes some loss in length growth. It is possible in exceptional cases, in which a very minimal amount of injury is produced, that there will be no hindrance to growth. The excision of the metaphysis causes a very slight disturbance in growth. The excision of the epiphyseal cartilage plate causes practically a complete cessation of active longitudinal growth. The most active and important elements necessary for longitudinal growth are located in the columns of cartilage of the epiphyseal cartilage plate. A limited property of producing length growth is possessed by the cartilage adjacent to the columns of cartilage. The localization of the growing point of bone is of value in explaining the results of injury and disease to this particular region.

Bone and Joint Infections Treated by the Carrel Technic.—HAWLEY (*Am. Jour. Orthop. Surg.*, 1917, xv, 586) believes that it requires at least one month of actual training to become familiar with the technic and that it is perfectly hopeless to expect to learn the method by reading the most complete description. He gives his reasons for his belief at length. The technic is reviewed as follows: Complete exposure of the infected tissues can never be too liberal or extensive. Pockets spell failure. Contact of the sterilizing agent should extend to every part of the wound surface. The object is progressive sterilization. This requires at each dressing as finished surgical asepsis as an abdominal operation. Gloves should be worn and instruments used instead of fingers. Two sets of instruments are preferred, one for the skin and one for the wound. The first step of the dressing is the mechanical sterilization of the skin. The vaselin is first removed by ether and then the skin cleansed very carefully with neutral sodium oleate. The second step is the mechanical sterilization of the wound by thorough scrubbing with sponges wet in oleate. This prepares the surface for the contact of the solution. It must be done thoroughly, but without trauma. The third step is the protection of the skin by anointing with sterile yellow vaselin, because Dakin's solution burns the skin. The fourth step is the placing of Carrel's tubes (with multiple fine holes and blind at

one end) throughout the wound. Gauze wet with the solution is placed around the tubes loosely. The solution is instilled every two hours sufficiently to fill the wound cavity. This has proved more satisfactory than the continuous drip. Reinfection is the defeat of this sterilizing process. This may be due to error of aseptic technic, defective mechanical sterilization of the skin or wound, defective solution, or failure to include every part of the wound. When the technic is incomplete the cases do well for a time and then remain stationary. When the technic is efficient and a case fails to progress it is a sure sign that a pocket exists. These are often impossible to locate unless the patient is given a general anesthetic. Reoperation is indicated when a case becomes stationary and whenever exposed bone persists. It is surprising how constant and how extensive these pockets are in non-progressive cases. Exposed bone always means necrosis, and the peculiar form of surface sequestration requires artificial separation. Spontaneous separation is unusually slow, but these surface moulds are easily loosened by gently tapping with a chisel. They usually lift off *en bloc*.

Results following the Treatment of Pelvic Inflammatory Lesions by Surgical Measures.—CLARK and NORRIS (*Surg., Gynec. and Obst.*, xxv, 1917, 33) say that from a study of more than 500 cases in which the postoperative and remote results of surgical intervention in pyogenic infections in the Fallopian tubes were considered, they conclude that course of conservative treatment decreases mortality, and enhances the chances for securing a good functional restoration of the pelvic organs. In all cases of acute infections of the Fallopian tubes the patient should be kept under observation until the course of the case is defined. In the great majority the temperature subsides, the pain disappears, the tubal enlargements decrease to palpable proportions, and if the attack is a primary one the patient may be given a respite from operation until a recurrent attack supervenes. Even under these recurrent conditions the conservative policy is again pursued until subsidence takes place a second time, when an abdominal operation is advised, with a view to treating existing conditions to the best possible advantage. Usually both tubes are removed and the ovaries are conserved. If, under the conservative plan, the symptoms do not abate and the tube continues to enlarge, vaginal drainage is instituted, either by direct incision into the cul-de-sac or through the guidance of an abdominal incision. In the purulent lesions of the tubes all operative procedures are attended by a higher mortality and a greater morbidity, whereas under a conservative waiting treatment a patient will seldom die during an acute infection. In their series there was no death. In all hazardous cases the increasing severity of the symptoms and the enlargement of pelvic masses give ample warning and permit of a simple drainage operation that will tide the patient over the danger. When the acute attack has subsided the surgeon has the best opportunity for ascertaining, during the course of an operation, the exact degree of involvement of the tissues, and thus he is enabled to select the type of operation best suited to the individual case. Conservative operative procedures instituted with a view to restoring a closed Fallopian tube seldom restore fecundity. Plastic operations upon the fimbriated extremities of the Fallopian tubes, with a view of effecting restoration